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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/808,610	03/14/2001	Robin E. Wright	56495US1A002	2868

32692 7590 05/24/2004

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EXAMINER	
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ART UNIT	PAPER NUMBER
1771	

DATE MAILED: 05/24/2004

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BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Paper No. 051204

Application Number: 09/808,610
Filing Date: March 14, 2001
Appellant(s): WRIGHT, ROBIN E.

Allison Johnson
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed August 27, 2003.

(1) Real Party in Interest

A statement identifying the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

A statement identifying the related appeals and interferences which will directly affect or be directly affected by or have a bearing on the decision in the pending appeal is contained in the brief.

(3) Status of Claims

The statement of the status of the claims contained in the brief is correct.

(4) Status of Amendments After Final

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

(5) Summary of Invention

The summary of invention contained in the brief is correct.

(6) Issues

The appellant's statement of the issues in the brief is correct.

(7) Grouping of Claims

Appellant's brief includes a statement that claims 19-35 do not stand or fall together and provides reasons as set forth in 37 CFR 1.192(c)(7) and (c)(8).

(8) Claims Appealed

The copy of the appealed claims contained in the Appendix to the brief is correct.

(9) Prior Art of Record

JP SHO 50-10353	Nitto Denko Co. Ltd.	12-1968
US 4,151,056	Park	4-1979
JP 4,528,307	Fuhr et al.	17-1985
US 5,208,311	Schaefer et al.	5-1993
US 5,460,857	Schunck	10-1995

(10) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claims 19-35 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP SHO 50-10353 in view of Park (US 4151056).

JP '353 is directed to form a cured coating from a solution of a photosensitizer, a photoactive crosslinking agent and a vinyl-based polymer on the edge face of a variety of tapes, which have adhesive at their edge face, such as a pressure sensitive adhesive tape. An activating beam (radiation) is applied to the coated surface and crosslinking is

carried out to form a cured layer, which prevents "oozing" of the adhesive at the edge face of the adhesive tape (page 2, first paragraph). JP '353 teaches that "oozing" is caused by a latent shrinkage force of the tape, which produces a compressive force from the outer wrap toward the center core, and press the adhesive outward (ooze) toward the edges of a rolled adhesive tape (page 2, bottom paragraph). In Examples 1-3, JP '353 shows the coating solutions contain 1-2 wt% curable components in toluene solvent (pages 9-10). Finally, JP '353 teaches that the crosslinked thin coating at the edge face does not peel (page 9, top paragraph).

For claims 19, 21, 23 and 33, JP '353 lacks a teaching of forming a cured coating of a solvent-free composition of acrylate oligomer, polyetheracrylate oligomer, and optional monomer and photoinitiator. However, it is noted that Park's invention is directed to a radiation curable coating composition (Abstract). Park teaches that it is known that increasing restrictions on the amount and types of volatiles which may be released in work environments, and the desire to reduce energy consumption have prompted the development of radiation curable coating compositions which are essentially free of volatile solvents that must be evaporated during the curing of composition (column 1, lines 7-13). The radiation curable coating compositions typically contain a radiation reactive oligomer, a radiation reactive diluent (monomer), a photoinitiator and, optionally a radiation reactive crosslinker (column 1, lines 18-21). Compounds containing acrylyl or methacrylyl groups have become by far the most widely used components of radiation curable coating compositions because of the ease and rapidity with which the acrylyl or methacrylyl groups undergo radiation-induced

addition polymerization (column 1, lines 32-37). Monofunctional monomeric acrylate or methacrylate esters are generally employed as the radiation reactive diluent; monomeric polyfunctional acrylate or methacrylate esters are employed as the crosslinking agent; and oligomers containing one or more acrylyl or methacrylyl groups are employed as the oligomer component (column 1, lines 38-44). Further, examples of many suitable radiation reactive oligomers which are known to those skilled in the art include polyurethane oligomers containing one or more acrylyl or methacrylyl groups (polyurethane acrylate). The acrylate or methacrylate capped polyurethane oligomer can also typically be prepared by reacting a hydroxyl-terminated polyether acrylate (polyetheracrylate) or methacrylate (column 3, lines 26-42). Finally, Park expressly teaches that "virtually any monomer or oligomer which can be polymerized by a conventional thermally initiated polymerization reaction can be employed as one of the radiation reactive components of the radiation curable coating compositions" (column 1, lines 28-32). While Park lacks a specific teaching of using a mixture of the acrylate oligomer and the polyetheracrylate oligomer, the Examiner notes that it is *prima facie* obvious to combine two compositions each of which is taught by the prior art to be useful for the same purpose, in order to form a third composition to be used for the very same purpose. The idea of combining them flows logically from their having been individually taught in the prior art. See MPEP § 2144.06. As such, in the absence of unexpected results, it would have been obvious to one of ordinary skill in the art of radiation curable coating to modify the coating solution of JP '353 with a well known radiation curable coating composition of acrylate oligomers, polyetheracrylate

oligomers, and monomeric (meth)acrylate esters, motivated by desire to obtain an easy and rapid coating process, which is solvent-free and also reduces energy consumption, so as to meet the increasing restriction requirements, as taught by Park.

For claim 20, Park lacks a teaching about the ratio between the acrylate oligomer and the polyetheracrylate oligomer. However, since Park teaches essentially the same subject matter (a radiation curable coating composition) as the instant invention, in the absence of unexpected results, it is believed that a suitable composition ratio is either implicitly disclosed by Park, or an obvious optimization to one of ordinary skill in the art of solvent-less radiation curable composition, motivated by the desire to obtain a coating composition with a suitable viscosity and/or a suitable cured coating properties.

For claim 22, although Park does not specifically include an amine functionality containing polyetheracrylate in his non-limiting examples (column 3, line 25 to column 4, line 20), it is believed that a suitable amine functionality containing polyetheracrylate is also well known to one of ordinary skill in the art of radiation curable coating compositions, as evidenced by Schunck (US 5460857), which is directed to a radiation cured dull coating. In Example 3, Schunck expressly teaches a coating composition which comprises a commercially available amine groups containing polyetheracrylate. The cured coating is scratch resistant (column 7, line 64 to column 8, line 33). As such, in the absence of unexpected results, it would have been obvious to one skilled in the art to include a suitable amine functionality containing polyetheracrylate in the radiation curable composition, motivated by the desire to obtain a scratch resistant cured coating, so as to improve the durability of the coating at the edge face of an adhesive tape roll.

For claims 24 and 26, the Examiner notes that Park teaches that typical monomeric (meth)actylate diluents include 2-ethylhexyl acrylate, etc. (column 1, lines 53-64), and it should be noted that the monomeric (meth)acrylate esters are inherently ethylenically unsaturated monomers.

For claim 25, Park expressly teaches various suitable polyetheracrylates, such as pentaerythritol diacrylate, ethylene glycol diacrylate, pentaerythritol triacrylate, etc. (column 3, lines 39-43; and column 4, lines 40-51).

For claims 27 and 28, Park does teach that the radiation curable coating compositions can contain any other additives which are conventionally employed in radiation curable coating compositions of the prior art, such as pigments, wetting agents, flatting agents, slip additives, etc., in the usual known effective concentrations (column 5, lines 32-38), and it is believed that matting agent, such as silica, is also a common and well-known additive to one of ordinary skill in the art for modifying the coating glossiness, as evidenced by Fuhr et al. (US 4528307), which is directed to a radiation curable coating. Fuhr teaches that matting agents such as dispersed silica are known auxiliary agents (additives) to a radiation curable composition (column 4, lines 24-29). As such, in the absence of unexpected results, it would have been obvious to one of ordinary skill in the art to include a silica matting agent in a coating composition, motivated by the desire to control the surface glossiness for aesthetic effect.

For claim 29, although Park does not specifically include a silicone acrylate in the aforementioned examples, however, it is believed that a suitable silicone acrylate is also well known to one of ordinary skill in the art of radiation curable coating compositions,

as evidenced by Schaefer et al. (US 4801658), which is directed to additives for radiation curable coating compositions for improved abhesivesness (Abstract). In Example 7, Schaefer shows a silicone polyether acrylate as a suitable additive (column 13, lines 40-68). As such, in the absence of unexpected results, it would have been obvious to one skilled in the art to include a suitable silicone polyether acrylate in the radiation coating composition, motivated by the desire to obtain an improved abhesiveness to the edge-face of the adhesive tape rolls.

For claim 30 and 31, Park expressly teaches that suitable photoinitiators, including benzophenone, etc., are well known to those skilled in the art (column 5, lines 1-13).

For claim 32, JP '353 is silent about the coating remains being adhered to the unwounded tape layer. However, the Examiner notes that since the prior art combination teaches essentially the same invention as claimed, it is believed that the coating remains being adhered to the unwounded tape is an inherent property. It should be noted that where the claimed and prior art products are identical or substantially identical in structure or composition, or are produced by identical or substantially identical processes, a *prima facie* case of either anticipation or obviousness has been established. See MPEP § 2112.01.

For claims 34 and 35, in Example 1 (page 9, paragraph 6), JP '353 teaches applying the radiation curable coating onto both edge faces of an adhesive roll, and in Example 2 (page 10, paragraph 1), the coating is applied to one edge face only. As such, in the absence of unexpected results, it would have also been obvious to one of

ordinary skill in the art to apply a discontinuous coating only to suitable area on the edge surface, motivated by the desire to reduce the cost by preventing adhesive oozing only at required areas.

(11) Response to Argument

With respect to Applicant's argument that "JP '353 fails to teach or suggest a coating disposed on an edge face of a roll of tape … JP '353 discloses detackifying the pressure sensitive adhesive present at the edge face of a roll of tape by crosslinking the portion of the pressure sensitive adhesive that is exposed at the edge face of the roll of tape. Thus, in JP '353 it is the pressure sensitive adhesive of the adhesive roll that is crosslinked" (Appeal Brief, page 4, top paragraph), the Examiner notes that JP '353 expressly teaches that the coating solution contains "a crosslinkable photosensitizer, or a crosslinkable photosensitizer and a photoactive crosslinking agent and a vinyl-based polymer and exposing the … coated surface to an activating beam and crosslinking the pressure-sensitive adhesive layer at the edge face of the tape or between the pressure-sensitive adhesive and the coated polymer so as to form a cured layer." (page 4, bottom paragraph). As such, JP '353 clearly teaches forming a cured layer at the edge face from the coated solution, nowhere JP '353 teaches that the crosslinking is limited to the portion of the pressure sensitive adhesive that is exposed at the edge face of the roll of tape, Appellant's argument to the contrary notwithstanding.

With respect to Appellant's argument that "Neither JP '353 nor Park teaches a composition that includes the reaction product of acrylate oligomer and

polyetheracrylate oligomer." (Appeal Brief, page 4, first full paragraph), the Examiner notes that Park expressly teaches that "virtually any monomer or oligomer which can be polymerized by a conventional thermally initiated polymerization reaction can be employed as one of the radiation reactive components of the radiation curable coating compositions" (column 1, lines 28-32). Park also teaches that both acrylate oligomer and polyetheracrylate oligomer are known to those skilled in the art as suitable radiation reactive oligomers (column 3, line 25 to column 4, line 20). As such, although Park lacks a specific teaching of using a mixture of the acrylate oligomer and the polyetheracrylate oligomer, in the absence of unexpected results, it would have been obvious to one of ordinary skill in the art of radiation curable coating to modify the coating solution of JP '353 with a well known radiation curable coating composition of acrylate oligomers, polyetheracrylate oligomers, and monomeric (meth)acrylate esters, motivated by desire to obtain an easy and rapid coating process, which is solvent-free and also reduces energy consumption, so as to meet the increasing restriction requirements, as taught by Park. It should be noted that it is *prima facie* obvious to combine two compositions each of which is taught by the prior art to be useful for the same purpose, in order to form a third composition to be used for the very same purpose. The idea of combining them flows logically from their having been individually taught in the prior art. See MPEP § 2144.06.

With respect to Appellant's argument that "nothing in JP '353 discloses that it is desirable to obtain a solvent-free coating." (Appeal Brief, page 6, bottom paragraph), the Examiner notes that Appellant argues the cited references individually. In response

to Applicant's arguments, it is asserted that one cannot show non-obviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981).

With respect to appellant's argument that JP '353 "teaches away from applying a protective coating layer to the surface of the edge face of a roll of pressure sensitive adhesive tape." (Appeal Brief, page 7, first full paragraph), the Examiner repeats that JP '353 expressly teaches forming cured layer at the edge face of a adhesive tape roll, as set forth above, Appellant's argument to the contrary notwithstanding.

For claim 20, with respect to Appellant's argument that "Nothing in either Park or JP '353 teaches or suggests a coating composition that includes from about 10 % to about 40 % acrylate oligomer and from about 50 % to about 90 % polyetheracrylate oligomer." (Appeal Brief, page 7, bottom paragraph), the Examiner notes that although Park lacks a teaching about a suitable ratio between the acrylate oligomer and the polyetheracrylate oligomer, it is noted that Park teaches essentially the same subject matter (a radiation curable coating composition) as the instant invention. As such, in the absence of unexpected results, it is believed that a suitable composition ratio is either implicitly disclosed by Park, or an obvious optimization to one of ordinary skill in the art of solvent-less radiation curable composition, motivated by the desire to obtain a coating composition with a suitable viscosity and/or a suitable cured coating properties.

For claim 22, with respect to Appellant's argument that "Nothing in either Park or JP '353 teaches or suggests a coating composition that includes polyetheracrylate that includes amine functionality." (Appeal Brief, page 8, first full paragraph), it is noted that

Appellant fails to raise such an issue in any of prior responses. Nevertheless, the Examiner notes that although Park does not specifically include an amine functionality containing polyetheracrylate in his non-limiting examples (column 3, line 25 to column 4, line 20), it is believed that a suitable amine functionality containing polyetheracrylate is also well known to one skilled in the art of radiation curable coating compositions, as evidenced by Schunck (US 5460857), which is directed to a radiation cured coating. In Example 3, Schunck expressly teaches a coating composition which comprises a commercially available amine groups containing polyetheracrylate. The cured coating is scratch resistant (column 7, line 64 to column 8, line 33). As such, in the absence of unexpected results, it would have been obvious to one skilled in the art to include a suitable amine functionality containing polyetheracrylate in the radiation curable composition, motivated by the desire to obtain a scratch resistant cured coating, so as to improve the durability of the coating at the edge face of an adhesive tape roll.

For claim 27, with respect to Appellant's argument that "Nothing in either Park or JP '353 teaches or suggests a coating composition that includes a matting agent." (Appeal Brief, page 8, second full paragraph), it is noted that Appellant fails to raise such an issue in any of prior responses. Nevertheless, the Examiner notes that Park does teach that the radiation curable coating compositions can contain any other additives which are conventionally employed in radiation curable coating compositions of the prior art, such as pigments, wetting agents, flatting agents, slip additives, etc., in the usual known effective concentrations (column 5, lines 32-38), and it is believed that matting agent, such as silica, is also a common and well-known additive to one of

ordinary skill in the art for modifying coating glossiness, as evidenced by Fuhr et al. (US 4528307), which is directed to a radiation curable coating. Fuhr teaches that matting agents such as dispersed silica are known auxiliary agents (additives) to a radiation curable composition (column 4, lines 24-29). As such, in the absence of unexpected results, it would have been obvious to one of ordinary skill in the art to include a silica matting agent in a coating composition, motivated by the desire to control the surface glossiness for aesthetic effect.

For claim 29, with respect to Appellant's argument that "Nothing in either Park or JP '353 teaches or suggests a coating composition that includes silicone acrylate." (Appeal Brief, page 8, third full paragraph), it is noted that Appellant fails to raise such an issue in any of prior responses. Nevertheless, the Examiner notes that although Park does not specifically include a silicone acrylate in the aforementioned examples, however, it is believed that a suitable silicone acrylate is also well known to one of ordinary skill in the art of radiation curable coating compositions, as evidenced by Schaefer et al. (US 4801658), which is directed to additives for radiation curable coating compositions for improved abhesivesness (Abstract). In Example 7, Schaefer shows a silicone polyether acrylate as a suitable additive (column 13, lines 40-68). As such, in the absence of unexpected results, it would have been obvious to one skilled in the art to include a suitable silicone polyether acrylate in the radiation coating composition, motivated by the desire to obtain an improved abhesiveness to the edge-face of the adhesive tape rolls.

For claim 32, with respect to Appellant's argument that "Nothing in either Park or JP '353 teaches or suggests a coating composition that includes the reaction product of acrylate oligomer and polyetheracrylate oligomer will remain adhered to a layer of the roll of tape when the layer is unwound form the roll." (Appeal Brief, page 8, third full paragraph), it is noted that Appellant fails to raise such an issue in any of prior responses. Nevertheless, the Examiner notes that since the prior art combination teaches essentially the same invention as claimed, it is believed that the coating remains being adhered to the unwounded tape is an inherent property. It should be noted that where the claimed and prior art products are identical or substantially identical in structure or composition, or are produced by identical or substantially identical processes, a *prima facie* case of either anticipation or obviousness has been established. See MPEP § 2112.01.

For claim 35, with respect to Appellant's argument that "JP '353 does not teach a discontinuous coating disposed on the first edge face. Park does not cure the deficiencies of JP '353. Nothing in Park teaches or suggests a discontinuous coating disposed on the first edge face of a roll of pressure sensitive adhesive tape that includes a first nontacky edge face." (Appeal Brief, page 8, third full paragraph), it is again noted that Appellant fails to raise such an issue in any of prior responses. Nevertheless, the Examiner notes that in Example 1 (page 9, paragraph 6), JP '353 teaches applying the radiation curable coating onto both edge faces of an adhesive roll, and in Example 2 (page 10, paragraph 1), the coating is applied to one edge face only. As such, in the absence of unexpected results, it would have also been obvious to one

of ordinary skill in the art to apply a discontinuous coating only to suitable area on the edge surface, motivated by the desire to reduce the cost by preventing adhesive oozing only at required areas.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

Victor S Chang
Examiner
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May 14, 2004

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